

CLAIMS

What is claimed is:

1. An extension ladder comprising:

a master ladder;

a slave ladder;

a pulley;

a locking mechanism; and

an anti-slipping mechanism; wherein the master ladder and the slave ladder form a ladder assembly; wherein the master ladder and the slave ladder are each composed of two posts and a plurality of rungs; and wherein the plurality of rungs of the master and slave ladders are arranged in a spaced-apart configuration with respect to each other and are perpendicular to their respective post;

in the pulley, a fixed pulley is provided near the top of the master ladder of which a rope rides through for raising the slave ladder by pulling on the rope;

in the locking mechanism, a pair of identical locking mechanisms are provided each having a claw hook connected to a claw hook stand secured at an inner side location of the slave ladder post for connecting the claw hook to the slave ladder post, a hooking area is defined by each claw hook for hooking at least one rung of the master and slave ladders; and

in the anti-slipping mechanism, two latch hook stands are provided for securing a respective latch hook fixed on an end of a link rod to one of the two slave ladder posts, wherein each latch hook defines a first hooking area for hooking at least one rung of

the slave ladder and a second hooking area for hooking at least one rung of the master ladder.

2. The extension ladder of Claim 1, wherein anti-wearing sleeves are installed on the rungs of the master ladder in a position being in contact with the two slave ladder posts.

3. The extension ladder of Claim 1, wherein corner guards are installed on at least one end of each ladder post.

4. The extension ladder of Claim 1, wherein an internal position limiting plate is installed at a lower part of the two slave ladder posts, and an external position limiting plate is installed at an upper part of the two master ladder posts.

5. The extension ladder of Claim 1, further comprising two identical adjustable ladder feet connected at a lower end of the master ladder posts.

6. The extension ladder of Claim 1, wherein the rope is secured to the link rod, and upon pulling of the rope each of the latch hooks are pivoted with respect to the latch hook stand in a direction away from the master ladder.

7. The extension ladder of Claim 1, further comprising means for preventing

each of said latch hooks from pivoting beyond a certain point in the clockwise direction.

8. The extension ladder of Claim 1, wherein the at least one rung of the slave ladder capable of being hooked by the first hooking area is a lowermost rung of the slave ladder.

9. An improved extension ladder of the type having a master ladder, a slave ladder, a pulley and a locking mechanism, wherein the master ladder and the slave ladder form a ladder assembly; wherein the master ladder and the slave ladder are each composed of two posts and a plurality of rungs; and wherein the plurality of rungs of the master and slave ladders are arranged in a spaced-apart configuration with respect to each other and are perpendicular to their respective post; in the pulley, a fixed pulley is provided near the top of the master ladder of which a rope rides through for raising the slave ladder by pulling on the rope; and in the locking mechanism, a pair of identical locking mechanisms are provided each having a claw hook connected to a claw hook stand secured at an inner side location of the slave ladder post for connecting the claw hook to the slave ladder post, a hooking area is defined by each claw hook for hooking at least one rung of the master and slave ladders, said improved extension ladder comprising:

an anti-slipping mechanism comprising:

two latch hook stands for securing a respective latch hook fixed on an end of

a link rod to one of the two slave ladder posts, wherein each latch hook defines a first hooking area for hooking at least one rung of the slave ladder and a second hooking area for hooking at least one rung of the master ladder.

10. The extension ladder of Claim 9, wherein anti-wearing sleeves are installed on the rungs of the master ladder in a position being in contact with the two slave ladder posts.

11. The extension ladder of Claim 9, wherein corner guards are installed on at least one end of each ladder post.

12. The extension ladder of Claim 9, wherein an internal position limiting plate is installed at a lower part of the two slave ladder posts, and an external position limiting plate is installed at an upper part of the two master ladder posts.

13. The extension ladder of Claim 9, further comprising two identical adjustable ladder feet connected at a lower end of the master ladder posts.

14. The extension ladder of Claim 9, wherein the rope is secured to the link rod, and upon pulling of the rope each of the latch hooks are pivoted with respect to the latch hook stand in a direction away from the master ladder.

15. The extension ladder of Claim 9, further comprising means for preventing each of said latch hooks from pivoting beyond a certain point in the clockwise direction.

16. The extension ladder of Claim 9, wherein the at least one rung of the slave ladder capable of being hooked by the first hooking area is a lowermost rung of the slave ladder.

17. An anti-slipping mechanism for an extension ladder of the type having a master ladder, a slave ladder, a pulley and a locking mechanism, wherein the master ladder and the slave ladder form a ladder assembly; wherein the master ladder and the slave ladder are each composed of two posts and a plurality of rungs; and wherein the plurality of rungs of the master and slave ladders are arranged in a spaced-apart configuration with respect to each other and are perpendicular to their respective post; in the pulley, a fixed pulley is provided near the top of the master ladder of which a rope rides through for raising the slave ladder by pulling on the rope; and in the locking mechanism, a pair of identical locking mechanisms are provided each having a claw hook connected to a claw hook stand secured at an inner side location of the slave ladder post for connecting the claw hook to the slave ladder post, a hooking area is defined by each claw hook for hooking at least one rung of the master and slave ladders, said anti-slipping mechanism comprising:

a first and a second latch hook;

a first latch hook stand for securing the first latch hook at a first inner side location of the slave ladder post;

a second latch hook stand for securing the second latch hook at a second inner side location of the slave ladder post, wherein each of the first and second latch hooks define a first hooking area for hooking at least one rung of the slave ladder and a second hooking area for hooking at least one rung of the master ladder; and

a link rod fixedly connected to each of the first and second latch hooks and being substantially parallel to the plurality of rungs.

18. The anti-slipping mechanism of Claim 17, wherein the rope is secured to the link rod, and upon pulling of the rope each of the latch hooks are pivoted with respect to the latch hook stand in a direction away from the master ladder.

19. The anti-slipping mechanism of Claim 17, further comprising means for preventing each of said latch hooks from pivoting beyond a certain point in the clockwise direction.

20. The anti-slipping mechanism of Claim 17, wherein the at least one rung of the slave ladder capable of being hooked by the first hooking area is a lowermost rung of the slave ladder.